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EXPLORATORY STUDY

Hidden Burdens: a Review of Intergenerational, Historical and Complex Trauma, Implications for Indigenous Families

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Abstract Drawing on decades of work as allies with Indigenous families and communities in Canada, the authors present a review of literature on intergenerational, historical trauma and the effects of early trauma. Included in the review are critical considerations as to whether understanding of stressed human capacity, as described by family members of various generations affected by traumatic events, may be increased through exploring the developmental implications of complex trauma. Research on brain-based effects of early trauma and work from the field of epigenetics may contribute other components to the understanding of complex, intergenerational impacts of multiple trauma contexts. Informed support for individuals and families combined with political advocacy at a systems level is critical in intergenerational trauma work in order to break historic patterns affecting family development and interactions.

Keywords Intergenerational · Historical trauma · Complex trauma · Developmental Trauma Disorder (DTD) · Residential schools · Aboriginal

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Introduction

Families who generations ago experienced traumatic upheaval resulting from war, residential schooling, oppression and racism, natural disasters and other events, may experience various effects and enactments of the trauma passed on from parent to child. Transmission is considered to be unintentional, and often without awareness of the contribution of the original traumatic event. Trauma from these various sources may bring about attachment disruption and resulting coping adaptations, affecting more than one generation, with cumulative effects of multiple traumas building through the generations and eventually spreading to culture and society (Mazor and Tal 1996). First generation trauma survivors may experience trauma so great that the human capacity "to perceive, register, know, transmit, record and remember" is impaired (Laub and Lee 2003, p. 434), demonstrating what Schore (2012) refers to as an archaic survival brain response based on ancient emotions involved with real and perceived threat. Most recently, there is a call for consideration of advances in the field of epigenetics as the most comprehensive explanation of trauma transmission, inclusive of both environmental and hereditary factors (Kellermann 2013).

The link between adult survivors of trauma and child abuse or neglect has been observed, with many injured, impaired and suffering caregivers not being able to be physically and\or psychologically responsive to their children (Briere 2005). Children with self-regulation challenges stemming from an environment of early stress, experiencing more chronic symptoms of post-traumatic stress disorder (PTSD), may subsequently become parents struggling with the same issues, setting up a potential cycle for complex trauma and/or disrupted attachment (Howe 2006).

The on-going reverberations from genocidal practices, colonization, current government policies and systemic racism in

many countries, including Canada, are directly linked to intergenerational trauma, the result of the transgenerational transmission of trauma. The core of intergenerational or historical trauma is the ripple effect of victimization where "the systemic effect of personal trauma often extends beyond the actual victim and can have a profound effect on the lives of significant others, particularly spouses and offspring" (Morrissette and Naden 1998, p. 45). Ongoing intergenerational trauma demands increased understanding of the effects of multigenerational disruption on healthy familial and cultural development (Tafoya and Del Vecchio 1996) in order for families to be appropriately supported.

From over 30 years of experience for each author as allies to Aboriginal communities in Canada, the situation of Aboriginal families has become a priority. In Canada, policies created by the government, particularly the *Indian Act*, (an act of Parliament giving authority for non-Aboriginals to control everyday life of Aboriginal people) continue to play a significant role in race-based trauma today (Archibald 2006; Royal Commission on Aboriginal Peoples 1996).

In both education and counselling contexts, the authors (in varying roles) have worked through the decades to understand how to best serve as allies and provide support for Indigenous families who experience high levels of stress from the combination of intergenerational effects related to lingering policies of colonization, including the residential school legacy, and racism encountered on a daily basis. These dynamics, sometimes referred to as *race-based traumatic stress*, consist of the psychological consequence of institutional or interpersonal racial discrimination combined with the effects from other traumatic experiences (Bryant-Davis 2007; Tafoya and Vecchio 1996). Canada, the United States, and Australia all share common themes of colonization through assimilative policies.

The written histories of colonization in Canada, Australia, New Zealand and the United States are filled with accounts of immense loss of life (Palacios and Portillo 2009), suppression of culture (Kirmayer et al. 2000), and the intentional deculturalization of Indigenous peoples (Wesley-Esquimaux and Smolewski 2004). Recently in Canada, the Truth and Reconciliation Commission (2015), a component of the Indian Residential Schools (IRS) Settlement Agreement, has released extensive recommendations regarding these matters. One of the recommendations is a call for all levels of government to acknowledge that the current state of Aboriginal Health in Canada as a direct result of previous government policies. Aboriginal practitioners and colleagues often relay that there is abundant evidence on what the devastating results have been, but they request that the focus move to healing work and interventions. The authors are respectfully adding another component to understanding the transgenerational transmission of trauma: the mind/body effects of early adverse childhood environments. Such understanding is essential in order to develop appropriate interventions and to work with families in breaking intergenerational chains of trauma.

Working with Aboriginal families and communities, the authors have witnessed the complex struggles related to colonization and the efforts of community members to address the resulting issues. A recent step has been to look at the diagnosis of Post-Traumatic Stress Disorder (PTSD) and the expanded diagnosis of complex trauma, also referred to as Developmental Trauma Disorder (DTD), to understand the context of parenting and problematic coping behaviours. In many Aboriginal communities, a phenomenon, likened to a protective membrane of support, is provided by the significant people in trauma survivors' lives,; yet their participation may result in some level of traumatization for such helpers (Morrisette and Naden 1998). Without awareness of the etiology of trauma,(Yehuda et al. 2001), parental and child-focused support and interventions may be ineffective or inappropriate.

The literature presented in this article becomes part of a discussion as to whether stressed human capacity described by family members of various generations affected by traumatic events may be understood more holistically through exploring the intergenerational and historical effects of Complex Trauma. Recent findings from neurobiological research provide a clearer picture of how survivors of early trauma may interact with stressful events and why coping behaviours, (often pathologized in treatment) develop and are maintained. These coping behaviours have important implications for parenting issues and for pro-active approaches to address parenting difficulties and prevent further adverse childhood events. Pro-active and preventive work is critical in efforts to break patterns of intergenerational trauma.

Review Methods

An on-going review of traumatology literature was conducted using the following computerized databases: PsycInfo, Academic Search Premier, MEDLINE, Science Direct, Google Scholar, and Education Resource Information Center (ERIC). The search strategy was adapted for each database, based on subject headings. Inclusion criteria for the literature reviewed was English language articles, published between 1990 and 2015, under the topics of intergenerational, historical, transgenerational trauma, complex trauma and\or Developmental Trauma Disorder, trauma and epigenetics, residential school trauma and Aboriginal survivors. Foundational research was included to present the background for the current discussion. Literature included books, research studies and meta-analyses, as well as review and critique articles covering foundational research from Holocaust and residential school survivors to recent neurobiological and epigenetic research on trauma effects and environments. The search yielded international studies from Australia, Cambodia,

Canada, Ireland, Israel, the United Kingdom, and the United States, providing aspects of a global perspective.

In order to systematically make meaning and reduce the data, a qualitative content analysis was undertaken. This approach facilitates a systematic yet flexible way to construct meaning through literature reviewed (Schreier 2012). Specific aspects of the literature relevant to a discussion on the complex interaction of historical, environmental, and brain-based elements affecting intergenerational trauma were focused on. The main categories identified in the analysis of literature reflected all four major theories of transgenerational trauma transmission, including socialization\sociocultural models, psychodynamic relational models, family systems models, and genetic or biological models (Kellerman 2001).

Significance and Connections: Intergenerational, Historical and Complex Trauma

For professionals and paraprofessionals working with clients who have experienced early trauma, it may be beneficial to consider the complexity of the neurobiological response to prolonged adverse experiences and the resulting effects. Until recently, the brain-based effects of early childhood maltreatment and neglect remained hidden. The field of neurobiology, through the use of magnetic resonance imaging (MRI) and positron emission tomography (PET) brain scans has contributed new information to traumatology, providing another layer to the conceptualization of historical and intergenerational trauma. Through this technology, early stressors have been shown to potentially cause changes in multiple brain circuits and systems through the effects of tension and anxiety (Anda, et al. 2006; Teicher et al. 2006). Without information on how brain structures may develop differently under traumatic conditions, survivors from various generations internalize their survival-based behaviours as evidence of dysfunction and pathology. The presentation of basic information on the neurobiological implications of early trauma has often been healing in itself for survivors.

Complex trauma focuses on early life experiences, which may include physical, emotional, and sexual abuse, serious attachment disruption, deculturalization, repeated invasive medical procedures, and other adverse childhood events occurring in the first decade of life. Many researchers and practitioners believed, from the inception of Post-Traumatic Stress Disorder (PTSD), that symptoms of childhood trauma, including challenges with impulse and affect regulation, relationship breakdown, and attention and dissociative problems, extended beyond PTSD symptomatology in their complexity. Findings from the DSM-IV field trials suggested that trauma has its most pervasive impact during the first decade of life and that the diagnosis of PTSD was not developmentally sensitive (van der Kolk et al. 2005). A differential diagnosis of disorders of extreme stress not otherwise specified (DESNOS) (van der Kolk et al. 2005) evolved into the term "complex trauma." Van der Kolk et al. (2009) suggested that the conceptualization of complex trauma or DTD is intended to better describe effects on children and youth exposed to chronic interpersonal trauma. Teicher (2000) described how events causing extreme stress might lead to numerous differences in the structure and physiology of the brain that may have long-term effects on multiple human functions.

Recent discoveries in early trauma research focused on the developmental aspects of interpersonal trauma may provide additional insight into the transmission of trauma through transgenerational stress and the effects of that stress.

Complex Trauma Implications

In looking at possible complex trauma or DTD links to intergenerational trauma, the authors are in no way implying that all parents who suffer abuse or neglect demonstrate fearful, neglectful or abusive behaviour towards their children or that all affected children's initial caregiving systems included abuse and neglect issues. Complex variables exist in all families, generally grouped as; victim variables, characteristics of the stressor, and social response, support, and resources (Briere and Scott 2006). Many parents and children demonstrate resiliency, and the call for more research on genetic vulnerability and genetic resiliency will bring much-needed information for early intervention. There have been few studies that show significant results for the transmission of physical abuse, with the transmission of symptoms from childhood trauma considered to be far more complex than mirroring punitive behaviour (Yehuda et al. 2001). Problematic caregiver characteristics fall on a spectrum from distressed to punitive, detached to unpredictable (Cook et al. 2005). Disorganized attachment can be outside the control of caregivers, particularly with caregivers who are dealing with their own addiction and unrecognized trauma issues. Emotional abuse and neglect may be linked to parents who are experiencing PTSD symptoms of avoidance, numbing and strong emotions (Yehuda et al. 2001). Children with Fetal Alcohol Spectrum Disorder (FASD) may be particularly vulnerable to attachment disorganization and disruption due to early and repeated placements in various homes, often precipitated by addiction issues in families of origin. The alcoholism that may affect parenting competencies in the critical early years of development for children with FASD has the potential to put these children at higher risk for abuse and neglect (Astley et al. 2000) and the resulting effects of complex trauma, exacerbating the effects from FASD.

Briere (2005) suggests that children are raised differently when caregivers operate out of fear. Many of the parents with whom the authors have worked are hypervigilient due to their own trauma histories, and are extremely anxious about all aspects of caring for their children.

Carlson (1998) describes how when the caregiver is the source of fear or is reacting out of fear, the infant may be placed in an irresolvable, stressful situation where she or he cannot approach the caregiver or leave the environment. Some infants have no organization of attachment behaviour due to frightening behaviour or frightened behaviour on the part of their caregiver. Not surprisingly, many traumatized children demonstrate changes in expectations about themes of important relationships (Thompson and Kaplan 1996). Vulnerable infants and children experience both abandonment and unpredictable danger at a time when they have little or no control (Howe 2006). van der Kolk et al. (2009) clarified that there have yet to be clinical or experimental research studies to identify specific neural substrates for DTD, yet the previously-described research provides an indication of possible neurobiological and physiological implications for children who have experienced early trauma.

Development Children who exhibit DTD symptoms resulting from interpersonal early trauma and/or ambivalent-avoidant caregiving resulting in disorganized attachment may suffer long-term problems with self-regulation, learning and attention, and personality issues, sometimes at a level of severity considered to be a form of psychological dysfunction (Briere and Scott 2006; Cook et al. 2005; Howe 2006; van der Kolk et al. 2005). Abused or neglected children who exhibit structural brain changes often have a difficult time acquiring the requisite skills for language acquisition- either home language or second languages. Early language learners are most susceptible given the delay in myelination of the brain and the reliance on memory (Bremner 2002; Bright 2008). A child who has experienced trauma "will develop language more slowly and may have communication delays because those parts of the brain were not stimulated at a crucial developmental stage" (Klorer 2008, p. 46). Developmentally expected language levels and skills may not be evident, interfering with relationship building.

Attachment serves as the relational context where internal representations of self and other develop, resulting in serious implications when the attachment relationship is compromised by trauma, often in the form of extreme, survival-based behaviours (Cook et al. 2005). Lipschitz et al. (2002) stressed the extreme variation in the clinical presentations of children and adolescents with trauma experience, noting that the symptoms and changes in behaviour may be transient or long-term. The majority of traumatized children have symptoms that persist, requiring some type of intervention to ease those symptoms. The inability to self-regulate is considered to be one of the most persistent symptoms of complex trauma and may have the most profound implications for intergenerational trauma.

Affect Regulation Adequate and healthy emotional stimulation in early development by primary caregivers is critical in order for children to identify and regulate appropriate emotions later in life (Davies 2002). Affect regulation requires development of the frontal cortex, and children who are taught how to regulate their emotions accelerate the maturity of the cortex through repeated use (Davies 2002; Lester et al. 2003). In a healthy environment, the child's caregiver provides psychological containment, helping the child modulate his or her arousal by calming high arousal and responding to physical needs and stimulating low arousal when needed (Ogden et al. 2006). Children experiencing DTD may be chronically activated and unable to self- regulate affect and self-soothe due to the lack of such external affect support and modeling. Howe (2006) suggested that children who are unable to regulate their emotional arousal are at risk of developing behaviour problems, especially aggression and various forms of psychopathology. These behaviours often result in placement in foster or adoptive care, and more disrupted attachment. Many avoidant children are emotionally self-contained, as they have had to consciously exclude attachment-based behaviours in order to survive (Berlin 2001; Lyons-Ruth and Spielman 2004). Highly unregulated attachment and complex trauma may result in controlling behaviours, compulsive caregiving, compulsive compliance, self-reliance, or coercion, sometimes moving from the behavioural extremes of destructive aggression, blaming and threats, to presenting as disarming and helpless (Berlin 2001; Howe 2006). Tishelman et al. (2010) describe children who have experienced traumatic events as having difficulty integrating emotional, cognitive and sensory information with the consequences of these processing differences then multiplying in families, classrooms, and communities.

Tafoya and Del Vecchio (1996) described adult Aboriginal people with residential school experiences as often coming into therapy with pervasive low self-worth, depression, feelings of powerlessness, and alienation, with many who feel abandoned and confused about family roots and who express concern with their need to parent - all issues related to attachment disruption and early trauma. Many Aboriginal people who lost parental and cultural role models through forcible attendance at residential schools have had to invent their own methods and strategies to negotiate the two worlds and cultures, sometimes mirroring the efforts of avoidant, ambivalently attached children previously discussed. In the field of epigenetics, researchers now suggest molecular changes due to adverse environments are also contributing to parent and child interactions.

Epigenetic Considerations

Research on the effects of complex trauma provides evidence that the inability of caregivers to provide a safe environment

where children's basic needs are met may result in long-term neurobiological impacts that affect emotional regulation, socialization, learning and other aspects of behaviour. Beyond these effects, van der Kolk et al. (2009) discussed the possibility of genetic risk from maltreatment symptoms through gene and environment interactions, with chronic interpersonal traumatic stressors considered environmental risks. This epigenetic consideration mirrors the thoughts of some Aboriginal community leaders who have shared with the authors their concern regarding "a gene for trauma." The field of epigenetic research includes investigations of the effects of behavioural and cultural transmission of information across generations, including modifications at a molecular level, encompassing acute, short-term homeostatic epigenetic alterations and potentially chronic, life-long allostatic changes (Griffiths and Hunter 2014).

Building upon evidence from family, twin, and molecular genetic studies, Koenen et al. (2007) posits the existence of genetic factors influencing individuals' susceptibility to develop complex trauma symptoms. Yehuda and Bierer (2009) explain that epigenetic modifications may be both stable and long-lasting where a change in genes caused by environmental stress and resulting in the alteration of the function of a gene has the potential to be transmitted across generations. Specifically at a molecular epigenetic level, in DNA methylation, heritable changes in gene expression above the level of DNA sequence are suggested to occur due to this environmental stress, often resulting from any prolonged traumatic situation, leaving residue on the methylation or coating of the chromosomes (Meaney and Szyf 2005). Zannas et al. (2015) explain that "the epigenome involves molecular interface between the environment and the genome, influenced by genetic sequence, receiving regulatory feedback from environmental cues, resulting in gene function shaped in response to the environment" (p. 328).

Researchers clarify that despite increased knowledge over the past 20 years on the biological impact of early developmental stress, including the genetics of PTSD (Sipahi et al. 2014; Voisey et al. 2014), research is in the early stages regarding the molecular mechanisms where the stress from early adverse events results in brain changes leading to behaviour outcome (Blaze et al. 2015). Griffiths and Hunter (2014) suggest that despite the more persistent, negative effects of epigenetic mechanisms, such mechanisms can also contribute to aspects of resiliency in the ability to survive and overcome stressful environments through changes in the environment and supportive interventions.

Intergenerational Trauma

The assumption that parents transmit unresolved tension and feelings to their children, generated from their own families of origin, has been the basic construct underlying many theories of intergenerational trauma (Stern 1995). Intergenerational trauma may take the form of reconfigurations of trauma inflicted by a person on another when personal trauma is unacknowledged or dissociated, resulting in a "chain of pain" (Byers and Gere 2007, p. 388).

Substantial theoretical and clinical work exists on the transgenerational effects of war trauma related to the Holocaust, with explicit attention paid to difficulties in the regulation of separation-individuation and aggression problems in children of survivors (Mazor and Tal 1996; Rowland-Klien and Dunlop 1998; Sack et al. 1995). The and theoretical body of knowledge that may have relevance to the genocidal trauma and intergenerational transmission of trauma affecting Indigenous populations, including many Aboriginal families and communities (Brave Heart 2000; Brave Heart and DeBruyn 1998; Evans-Campbell 2008). An important connection for both groups is the point that the original traumatic event was inflicted by outside sources rather than within the family as is often found in other intergenerational research (Yehuda et al. 2001). The power dynamics with the outside sources of oppression interact at all levels from personal to familial to cultural. Aspects relevant to both groups include the issue of collective grief, community memorialization, and the difficulty in mourning mass losses (Oxenberg 2003). One of the themes found in the literature on research with Aboriginal participants is that of multigenerational losses, and the struggle to "deal properly with loss and grief… profoundly linked to the process of resolving complex community issues, strengthening families and creating sustainable community development" (Mussell et al. 2004, p. 22).

There are also important differences between the intergenerational trauma affecting Aboriginal people and that experienced by survivors of war. For survivors of war, the traumatic experience is often experienced by the first generation only. In the case of many Aboriginal people, generations have been exposed to traumatic experiences of violence, sexual abuse, accidental death, suicide, discrimination, and oppression. The trauma here is intergenerational because "economic, social, and political dependence, the effects of colonization, are intergenerational" (Gagne 1998, p. 368). This specific intergenerational trauma effecting Indigenous people is often referred to as historical trauma.

Historical Trauma Defined

Through work and research with Aboriginal communities in the United States, Marie Yellow Horse Brave Heart (Brave Heart 2000; Brave Heart and DeBruyn 1998) developed her seminal work on the concept of historical trauma, an important contribution to intergenerational traumatology (Evans-Campbell 2008). Historical trauma describes the legacy of traumatic events experienced by historically-oppressed

communities over succeeding generations, a legacy that includes social and psychological responses. Using historical trauma as a lens presents a broader picture of the compounding effect of traumatic experiences over time (Evans-Campbell 2008). The three main characteristics of historical trauma include: (a) the widespread nature of it in many Indigenous communities, (b) historic traumatic events resulting in distress and collective loss for contemporary community members, and (c) the purposeful, destructive intent of outsiders who perpetuated the traumatic events (Brave Heart 2000; Evans-Campbell 2008). Disease outbreaks such as smallpox, measles, influenza, plague, diphtheria, typhus, cholera, scarlet fever, pertussis, and varicella decimated Indigenous populations (Kirmayer et al. 2000; Wesley-Esquimaux and Smolewski 2004). Crowded living conditions, such as on reserves and residential schools, also contributed to the exposure and severity of these diseases (Waldram et al. 2007). One of the most destructive events resulting in historical trauma in northern communities was the multigenerational loss of children through the residential school system.

Some members of generations of residential school students who were emotionally, sexually, and physically abused were described as unintentionally transmitting the effects of their trauma to succeeding generations (Assembly of First Nations 1994; Gagne 1998; Kirmayer et al. 2003; Tafoya and Vecchio 1996). This transmission process has been visualized as the intersection of horizontal, normative stress with the vertical, transgenerational stress, resulting in a massive increase in anxiety (Stern 1995). The cascade of vertical anxiety down the generations is conceptualized as the process of emotional triangulating between family members, while horizontal anxiety develops in response to present stressors within the nuclear family (Gajdos 2002). This transmission of anxiety may also be understood at the individual, familial level through the discussion of neurobiological and epigenetic research findings. As described previously, epigenetic research suggests that epigenetic modifications resulting from highly stressed environments have the potential to be transmitted across generations (Yehuda and Bierer 2009). Such modifications may help explain the vertical, transgenerational stress and anxiety that often results in survival-based behaviours and adaptive coping that may affect the ability to self-regulate, a critical ability required to break intergenerational patterns of interactions.

Intergenerational Trauma Research

One of the difficulties encountered in intergenerational research is the heterogeneity of generational participants with members of the second and third generation. Whether Indigenous or non-Indigenous, participants are often not homogeneous. Variables affecting individuals include the age of parents, their backgrounds, the type of trauma, emotional disposition and other personal assets (Weiss and Weiss 2000). Similarly, childhood-focused variables identified from disaster research in the past comprise parental distress, parental psychological history, and the overall emotional climate in the home (Sack et al. 1995), again suggesting complex trauma effects. Researchers are always cautioned to recognize the heterogeneity of responses that exist within any victim survivor group (Nagata 1989; Weiss and Weiss 2000).

Researchers studying Holocaust intergenerational transmission present four interwoven processes: uprooting via emigration; immigration into a new culture; specific family processes; and personal processes (Bar-On 1996). The issues for many Indigenous populations, including Aboriginal people, have a similar issue of enforced displacement, yet differences are found with forced cultural assimilation and the loss of culture that has resulted in historic unresolved grief (Brave Heart 2000; Brave Heart and DeBruyn 1998; Evans-Campbell 2008). Mazor and Tal (1996) make a critical point that the seeming ambiguity of the process of intergenerational trauma in theory, research, and clinical practice involves the simultaneous experience of two different realities: the experience of survivors who have lost family, land, and their own developmental and cultural past, and the experience of survivors and their families in various societies that may lack awareness and unknowingly invalidate survivors' traumatic reality.

Direct and Indirect Transmission Distinctions between direct and indirect intergenerational transmission are important to understand in order to develop appropriate interventions. In the authors' lived experience in community work, both types of transmission in the children, grandchildren and great granchildren of residential school survivors have been observed. Weiss and Weiss (2000) described direct transmission, or transposition, as evidenced by children learning to think and behave in challenging ways similar to their parents, which results in children living aspects of their parents' traumas as if they were their own; as if they had been there. Members of the second generation may unconsciously live their parents' traumas in their lives, sometimes through abandonment, depression, and guilt as parents unconsciously transmit their depression, anxiety and regret to their children. Such behaviours may be linked to symptoms of complex PTSD that may be exhibited in Complex Trauma, such as numbing and avoidance, or to possible correlations between depression and low levels of cortisol, one of the stress hormones released under threat.

Weiss and Weiss (2000) describe how indirect or redirect transmission is suggested by children burdened by unconscious expectations as they compensate for their parents' losses and the diminished ability to parent; the trauma itself is not considered to be transmitted. The loss of parenting skills

through forced attendance at residential schools and the resulting traumatic experiences is an example of indirect transmission. The absence of developmental skills assumed "normal" in interactions with the perpetrator social group then result in cascading consequences for both the parents who were originally traumatized by that same social group and their children.

Trust and Silence in Intergenerational Trauma

An individuals' self-esteem is partly based on positive assumptions and experiences with the benevolence of the world (Bar-On 1996; Saakvitne and Pearlman 1996). Trauma often shatters these assumptions, resulting in a break in the relationship to oneself and the world, leaving people without trust in themselves or with other people (Crossley 2000; Herman 1992). This break may result in isolation and lack of communication regarding the survivor's inner experience.

In intergenerational trauma research, one of the central clinical features is the silence that occurs in families surrounding traumatic experiences (Evans-Campbell 2008; Fossion et al. 2003; Herman 1992; Mussell et al. 2004; Nagata and Cheng 2003). The isolation and wordlessness of trauma persists, often referred to as the intergenerational conspiracy of silence (Nagata and Cheng 2003), with symptoms serving as a form of speech in family patterns, repetitions, and interconnections (Fossion et al. 2003). The trauma remains a "secret" trauma not verbally expressed; unacknowledged but with the potential to be passed on nonetheless (Byers and Gere 2007). The first generation has difficulty in communicating the trauma, and with silence as the only means of expression, discontinuity occurs in the historical legacy of the family (Fossion et al. 2003). This disruption in the transmission of family legacy or culture mirrors the difficulties faced by Aboriginal people in Canada who survived the residential school system. The silencing of experience by the oppressors punishments was in strong contrast to societies where knowledge was transferred through storytelling. In oral transmission, each listener would bring personal memory and creative imagination to the storytelling event and hear a story uniquely rooted in his/her own life experience. The silencing of many Indigenous families through traumatic experiences has contributed to both the transmission of trauma effects, and the silencing of cultural traditions. Living in silence caused by imminent punishment for speaking, and the resulting fear and shame was often a significant part of life for a child experiencing abuse in residential school and this ingrained state of being is often carried on in survivors' lives (Chrisjohn et al. 1997; Duran et al. 1998).

Looking at what is now known regarding memory and trauma, the authors are pondering the described silence as possibly linked to memory implications resulting from traumatic events. Researchers have found that there is usually no verbal memory prior to 3 years of age, resulting in much of what affects children as being implicit and non-verbal (Briere 2005). These children become adults who cannot verbally access what has happened to them, and thus cannot often access understanding of their own behaviours. Traumatic memory is also not integrated into explicit memory due to the shift in trauma survivors to right hemisphere lateralization in the brain, with memory stored as affective, sensory states rather than as verbal representations (van der Kolk et al. 2001).

Social amnesia is also found in the "shroud of silence and non-confirmation of the trauma" (Nagata 1989, p. 63) alluded to previously. An example can be found in the national "amnesia" on the legacy of the residential school system. A major difference between the Holocaust trauma for survivors and the history of trauma for Aboriginal people is the generally world-wide acknowledgement of the Holocaust, and until the recent apology from the Canadian government and the work of the Truth and Reconciliation Commission (2015), the general lack of acknowledgement of the genocide against Indigenous people (Chrisjohn et al. 1997; Pier 1998) reflected in Canada.

Absence of communication is also an aspect of PTSD linked to avoidance behaviors, in which survivors avoid situations and activities linked to the trauma in order to lessen thoughts and feelings associated with the event (Herman 1992; Nagata and Cheng 2003). Some children of interned Japanese-Americans describe their parents as unwilling to discuss their internment, avoiding emotions and using cryptic communication patterns, which reflect cultural values of fatalism and internalization of emotions (Nagata and Cheng 2003). Similar to interned Japanese-Americans, many Aboriginal parents with residential school experience do not discuss mental health concerns or their negative experiences at the schools to anyone, including their children. This pattern may be due to having previously experienced societal responses such as indifference and disbelief from many unaffected citizens (Evans-Campbell 2008; Mussell et al. 2004). In their research with second generation Japanese-Americans, Nagata and Cheng (2003) described how parents did not want to address their experience with their children for fear of upsetting them and would only do so if the children asked, whereas the children described not wanting to ask for fear of upsetting their parents. The authors have experienced children of residential school survivors expressing the same concerns and continuing to wonder about what their parents had experienced, yet fearing the possible reactions from asking. This situation may indicate that the building of a new life for survivors is incompatible with the oral transmission of past history (Fossion et al. 2003), at least until the perpetrator and survivor groups desensitize the shared experiences towards healing and regeneration of traditional cultural practices.

Evidence of Intergenerational Trauma

First Generation Children who grow up in families whose parent or parents suffer from complex PTSD or complex trauma may be affected by their parent's struggle in any or all of the following domains: impairment of affect regulation; mental, physical, or behavioural dissociation; self-harm; somatization (body effects); interpersonal difficulties (Van der Kolk 2001), and compensatory strategies including various behavioural and substance addictions to cope with resulting distress. These various difficulties may be linked to the ancient stress survival response to threatening situations. During this response, the Hypothalamus-Pituitary-Adrenal (HPA) axis is activated, releasing hormones that will prepare the person for fight, flight or freeze (Bevan et al. 2005). There are extreme variations in the lasting effects from heightened stress responses resulting from aversive childhood experiences. In adult survivors of childhood abuse, researchers have documented states of hypercortisolism, where there is an inability to terminate a stress response, or hypocortisolism, resulting in a lack of stress response. Dysregulated trauma response defined by these states may range from hyperarousal, indicated by anxiety and irritability, to hypoarousal, indicated by flat affect, withdrawal and dissociation (Cicchetti et al. 2001). In the context of families, any of these presentations may interfere with attachment between parents and children, which is crucial for physiological, psychological, emotional, and social development (Solomon and Heide 2005).

Children whose parents experienced trauma as a result of social persecutions present unique aspects in some of their developmental processes (Duran and Duran 1995; Mazor and Tal 1996). The genocidal context of the trauma, and the corresponding response, has been observed to impair parenting abilities, often through PTSD symptoms and affect dysregulation, combined with continuing oppression and discrimination. The experience of the world as a dangerous place can be transmitted to children and significant others who may not understand or be unaware as to the origins of survivors' fears about safety (Abrams 1999; Carlson 1998). This transmission of danger may be at the root of difficulties found in the expression of trust and enjoyment of life documented as characteristics of children of Holocaust survivors (Mazor and Tal 1996). The cross-generational impact of Japanese-American internment is found in family communication patterns, within-group ethnic preference, and in a sense of vulnerability (Nagata and Cheng 2003).

The effects of trauma in the first generation may include multiple symptoms as described, sometimes leading to high levels of emotional and psychosocial disorders (Fossion et al. 2003). The conceptualization of complex trauma again may be a more comprehensive way of understanding the effects on members of the first generation because of the developmental nature of the effects on children who were very young when removed from their families. For first generation survivors, high levels of depression and anxiety resulting from grief and fear often resulted in difficulties in providing a supportive and safe environment for their children (Fossion et al. 2003; Mazor and Tal 1996). Parents who were survivors of residential school described to the first author as parenting out of fear, and trying not to attach to their children in order to protect themselves from the potential loss of their children. Mazor and Tal (1996) described how parents might be under the illusion that their losses can be remedied through the child, but this illusion may break down as the child seeks independence. Children sometimes serve the function of holding the past and containing the anxiety generated by the survivor parents. Similarly, when survivor parents transmit emotional messages concerning the fate and history of relatives, their children may attempt to try to fill the emotional void (Rowland-Klien and Dunlop 1998).

First Generation Effects of Residential School Trauma The definition of trauma characterized by loss of control, connection, and meaning (Herman 1992) fits the description of profound loss described by residential school survivors (Assembly of First Nation 1994; Corrado and Cohen 2003; Glavin 2002; Kinnon 2002). The word "trauma" is associated with a deep wounding of a person, and this wounding leads to complex and highly-refined strategies that survivors use to cope with life (Chrisjohn et al. 1997). Many adults who attended residential school describe feelings of anxiety, hyper-vigilance and mistrust (Assembly of First Nations 1994), all common symptoms of Complex trauma (Briere and Scott 2006).

Through extensive documentation and interviews, the Assembly of First Nations (1994) summarized various effects on survivors. Survivors describe disassociating from the trauma of witnessing various acts of violence and of distorting the experience by remembering it as a dream. Other former students describe large pieces of residential school experience as missing, sometimes with years of experience lost. Memories are often triggered by situations in life, leaving survivors feeling overwhelmed. For some, the residential school experience was so traumatic that they blocked out the memories and do not wish to re-experience those memories (Jaine 1993), a protective brain response. This may further explain the reluctance of many residential school survivors to speak about their experiences (Mussel et al. 2004). Another component of this reluctance can be traced to the experience of many Aboriginal people that non-Aboriginal people have not been historically trustworthy (Evans-Campbell 2008; Morrisette and Naden 1998).

The Assembly of First Nations (1994) recounts how many former students face difficulties with expressing emotion. Former students characterize these difficulties as being unable to express feelings, either positive or negative, resulting in

depression, inappropriate responses to situations, running away from situations, and substance abuse. This inability to linguistically express emotions first experienced in a punitive, powerless context gives rise to anger and frustration that sometimes manifests itself in forms of violence. This "shutting-down" or "holding in" of emotion can also lead to difficulty in sustaining relationships, especially those involving sexual intimacy. Survivors talk about difficulty with re-establishing relationships with family as they often returned home habituated to anger and resentment, especially if they had witnessed abuse or were abused in the schools. The symptoms and challenges faced by survivors fit with the effects of complex trauma and attachment disruption.

Second Generation For the second generation, the stress of living with trauma survivors can result in the entire family becoming secondarily traumatized due to the generalized effect of the disruption on connection and communication patterns of the family as a whole (Abrams 1999). Clinical studies of populations of adult children of survivors indicate characteristics of enmeshed dependency, difficulties with emotional expression, conflict in basic relationships, and high levels of guilt, frustration, and anger (Mazor and Tal 1996). The children of survivors may also present a lower capacity for intimacy with their spouses, which mirrors some of the problems exhibited by residential school survivors and their children (Mazor and Tal 1996; Tafoya and Del Vecchio 1996). Affect dysregulation again becomes a concern, with children of survivors living in stressful situation because of their parents' impairment in consistently regulating emotions.

Members of the second generation may exhibit increased vulnerability to psychological distress including symptoms of PTSD or Complex trauma, problems in separation, individuation, and overachievement (Fossion et al. 2003). They may also show low self-esteem and inhibition, as well as difficulty in controlling aggression, maintaining intimate relationships, and resolving interpersonal conflicts (Fossion et al. 2003; Mazor and Tal 1996), all symptoms of complex trauma. Some survivor families implicitly assign to their children the roles of providing happiness and protection, with children of the second generation taking on caretaking roles, often exhibiting high levels of commitment and dedication, along with high levels of distress (Mazor and Tal 1996).

Third Generation There is sparse information available on the third generation, with contradictory findings in the existing studies. One study suggests that members of the third generation of Holocaust survivors are overrepresented by 300 % in referrals to child psychiatry services, whereas another study found that members of the third generation did not differ from the control group in the expression of aggression (Fossion et al. 2003). Researchers hypothesize that the transgenerational transmission of trauma may cease in the third generation. However, the work of Berger-Reiss (as cited in Abrams 1999) shows examples of symptoms in the third generation which are linked to hidden trauma two generations earlier, symptoms that are seemingly resistant to change in individual therapy, suggesting to the authors an epigenetic contribution.

A phenomenon involving the third generation is the survivors' willingness to talk to their grandchildren rather than to their children. The hypothesis is that it takes "a time-span of two generations to stimulate the willingness and motivation to return to traumatic past" (Fossion et al. 2003, p.524). Another perspective might be that it takes that long to lessen the intensity of the experiences. In talking to their grandchildren, survivors are able to reframe the feelings associated with the trauma they have experienced into a story, another example of the power of narrative (Bar-On 1996). The refocusing of the trauma by the third generation into a life-affirming perspective may give the second generation a way to assimilate their tragic legacy (Fossion et al. 2003). For example, the third generation may perceive the evidence of strength, resilience and greater purpose in surviving the trauma.

Historical Trauma within Residential School Survivors' Families

Moving from the history of colonization and the residential school system to understanding the long-term consequences found in many Aboriginal communities "requires a model of the transgenerational impact of cultural change, oppression, and structural violence" (Kirmayer et al. 2003, p. 21). An analogy has been made between the residential school experience and the phenomenon of addiction as the effects go far beyond the addicted individual (Chrisjohn et al. 1997). In reflecting on the research into intergenerational trauma and its applicability to the issue of historical trauma within Aboriginal families, it is the size and complexity of the rest of the trauma "iceberg" that is not apparent at the surface that is of concern, suggesting the need for more research in this area. Aboriginal populations may have similar risk factors as descendents of other traumatized populations for trauma exposure. This high degree of trauma exposure, mortality rates, and substance abuse may be connected to internalized ancestral trauma carried by many Aboriginal people (Brave Heart 2000; Duran et al. 1998). Generations of Aboriginal people have suffered trauma; the most profound multigenerational effect is the number of generations of Aboriginal children who lost not only their personal and cultural identity, but also their opportunity to acquire cultural knowledge of parenting skills (Feehan 1996; Tafoya and Del Vecchio 1996). Decades of historical trauma resulting from genocidal policies and practices means that this phenomenon is not simply an example of first generation survivors unconsciously transmitting trauma to second and third generation children and

grandchildren; rather, many generations are directly traumatized and carry trauma from their parents' and sometimes grandparents generation. Evans-Campbell (2008) views this situation as one of contemporary life stressors that may be manifestations of past assaults that are experienced within the context of historical trauma. These patterns may seem inescapable given the legalities on reserves in Canada, Indian status issues, limited education and employment options, health service access, and other life choices truncated by historic law and policy.

Lifting Burdens and Breaking Silence

Communities across Canada and in other countries are working to find ways to reduce the reverberation of trauma effects through generations. If the impact of systemic oppression and discrimination, both historical and present day, are not factored into issues of intergenerational trauma, the negative effects of such trauma may continue to disrupt healthy family development (Evans-Campbell 2008). Many Aboriginal leaders and allies are working to address these issues. Evans-Campbell and Walters (2006) use the term Colonial Trauma Response (CTR) to describe the subtle interaction of current and historical traumas that may affect families, a situation requiring consideration in supportive work. CTR consists of contemporary and historical trauma responses to collective events, with the defining element the connection to colonization. Current traumas include discriminatory acts, described by race scholars as "micro aggressions"; and contemporary events against members of ethnic minorities involving harassment, discrimination, and racism. This intersection of lifetime traumatic events may result in the compounding of responses to multiple stressors, responses that may be chronic in nature with signs of numbing and avoidance, or acute responses including hyper vigilance, somatization, and intrusive memories; all post-traumatic stress disorder (PTSD) symptoms that may be more indicative of deeper complex trauma affects.

As previously asserted, Aboriginal people who lost parental and cultural role models through forcible attendance at residential schools have had to invent their own methods and strategies to negotiate the two worlds and cultures. With the last residential school closing in Saskatchewan in 1996, there is a generation who has not been directly traumatized in residential schools. However, many reserve communities still have only residential placement settings as a choice for middle and/or high school. Generations may continue to be affected by historical trauma and by the effects of complex trauma. Community-based helping practitioners may identify the effects of trauma or they may continue to work with the effects unacknowledged. In addition to the use of "culturally congruent trauma theory and interventions, a consideration of Native history and the continuing transfer of trauma across generations are critical in developing prevention and intervention strategies that will be effective for Native people" (Brave Heart 2000, p. 8). The authors also add the need for awareness and understanding of the specific emotional and physical implications of early trauma through attachment disruption and complex trauma, a connection not often found in the literature on the residential school legacy. The challenge for helping professionals and paraprofessionals working with clients from Indigenous groups is to understand both historical and intergenerational trauma issues and any personal present-day trauma that first, second and third generation members bring to education, social and health services.

Healing Relationships as Interventions

Families act as emotional systems, and a promising practice may be to recruit young parents to help children and youth with affect regulation and self-soothing, and through this team effort, assist parents in becoming aware of their own affect issues. For parent survivors, high levels of depression and anxiety and coping strategies can result in difficulties in providing a supportive, rich environment for their children (Briere and Scott 2006). Assessing parents and children's relationship to pain is the central issue to affect regulation: the ability to calm/soothe oneself and the ability to feel pain without the overwhelming need to avoid it. If the pain exceeds the child or youth's or parent's capacity, she/he has to deal with it in some way, often with a multitude of coping mechanisms. For many Aboriginal parents, traditional Aboriginal healing practices provide relief and are preferred, encompassing traditions, ceremonies, values and ways of being.

There are calls for the use of a developmental-ecological perspective where all levels of a child's or parent's ecology of contextual systems is included in supportive work (Tishelman et al. 2010). Aboriginal children, families, and communities, prior to colonization, were very close to the land, culture, and spirituality. In many Aboriginal communities, community practitioners work with elders and mentors in identifying ways to help children and their parents self-soothe, with traditional connections to land-based activities. Domains identified by the Trauma and Learning Policy (TLPI) from the Massachusetts Advocates for Children to guide assessment and intervention include self-regulation, relationships, physical functioning and academics (Tishelman et al. 2010). Traditional performing arts and reculturalization experiences from Indigenous nations may form the basis for interventions in the first three domains, with dancing, drumming, songs, and storytelling combining the physical, relational, and regulating structures often required for children and parents who have experienced complex trauma to achieve balance and lower distress. For supportive strategies in the academic domain, storytelling, food harvesting, documenting local history, the use of traditional fine arts, and long house mathematics all

show promise for Aboriginal children through shared and culturally congruent experiential learning.

The establishment of safety is paramount to all trauma work (Herman 1992), beginning with the reduction of self-harming behaviours for both child and parent. Children who have internalized themselves as being unworthy of protection require safety in order to change this core belief (Tishelman et al. 2010). Competency and self-esteem in traditional Aboriginal education paradigms were developed through ideologies and principles of respect, humility, sharing, healing, generosity, cooperation, patience, humour, and willingness to help others (Grant 1996). Parents, grandparents and elders are now working to reestablish a well-defined philosophy of teaching and learning, roles and responsibilities for childrearing in order to lower developmental stress and promote growth and development. Relational repair in families ameliorates the effects of interpersonal damage that leads to self-harming behavior. A major area of work is helping caregivers regulate their own emotions and find way to consistently respond to their child's behaviour through various parenting skills, helping child and parent tolerate and sustain connection to internal states and emotions and communicate to each other about those inner experiences (Kinniburgh et al. 2005). Children and caregivers are assisted in finding ways to become attuned to each other's emotional needs, build emotional vocabularies, and help identify connections between past experiences and ways of coping (Kinniburgh et al. 2005). The key to success in individual and family work is setting the interventions within the context of historical and current events and experiences, with two-way culturally responsive engagement.

Conclusion

The complexity of the interaction between and among intergenerational/historical trauma, complex trauma effects, epigenetics and culture cannot be overstated. Aspects from sociocultural, psychodynamic relational, family systems, and genetic or biological models potentially contribute to appropriate assessment for survivors and their families. Genetic and biological models of transgenerational transmission of trauma effects provide hope through insight on the level of malleability of humans, with genetic dispositions activated into overwhelming distress and fear, or to functional coping according to the child's environment, suggesting human capacity to reverse effects (Kellerman 2013). Through each adverse event in life, the family serves as a buffer for the child in which to interpret the event (Royal Commission on Aboriginal Peoples [RCAP] 1996). Awareness of the effects of early, environmental stress at all levels will encourage family members to access more tools and resources to strengthen those buffers.

Clarity of what is happening within families who have experienced trauma is essential in order for members to take steps to break historic patterns of interactions and coping with the hidden burdens of an intergenerational trauma legacy. The history of raising children within Aboriginal families and communities is one of many rich relationships, as in other Indigenous nations (Smith et al. 2006). Traditional parenting mirrors what researchers now understand; early attachment to primary caregivers is the most important mitigating factor in trauma presentation (van der Kolk 1996). The authors have witnessed individuals and families whose lives have been transformed through information on complex PTSD and\or complex trauma, building an understanding of the impact of those symptoms on their lived experiences of family. The link to colonization helps to lessen the mistaken internalization as inadequate or dysfunctional parents, children or communities. Psychoeducational information leads to understanding as survivors coping with unspoken and unidentified trauma, affected by discriminatory policies and majority culture views. The authors see great potential for recruiting parents and extended family in helping children and youth understand effects of complex trauma that they may be experiencing, and shifting that experience into historical context. Through new knowledge and interventions that the parents and family members deliver, they gain a deeper understanding of their experience and supportive strategies that may be effective. By asking for parents' and family members' participation on the child's healing journey, connections are again strengthened and environmental, developmental stress lowered. Increased information on trauma effects may avoid the historic internalizing and stigmatization of trauma and lead to understanding, healing, and safely containing complex trauma effects so that intergenerational/historical trauma evolves into intergenerational growth.

The work is, of course, much larger than individual interventions and family supports. The Truth and Reconciliation Commission (2015) states that for reconciliation to begin, all levels of government need to comply with the principles, norms and standards of the United Nations Declaration on the Rights of Indigenous Peoples. Menzies (2010) emphasizes that acknowledgement of the role of public policy in the disruption of all aspects of the lives of Aboriginal people and the implications of such policies on continued intergenerational trauma found in communities and countries must be made. This is a critical step in addressing issues of poverty, inequality, oppression and discrimination, and to see progress made and political will taken on land claims and self-government in order to alleviate horizontal, normative stress and to take responsibility for vertical transgenerational stress described by Stern (1995). Only with this understanding and the promotion of all levels of interventions will patterns of intergenerational, historical trauma end and society be assured that the instigating genocidal practices never happen again as

the human dynamics move into open remorse, responsibility, and restitution lifeways.

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